

$$\int_0^1 \sqrt{1-x^2} dx$$

Here the given interval is $[0, 1]$, so $a = 0$ and $b = 1$,

For $n = 10$,

$$\Delta x = \frac{b-a}{n} = \frac{1-0}{10} = 0.1$$

since $n = 10$, there will be 11 number of partitions;

$$x_0 = 0, x_1 = x_0 + 1\Delta x = 0 + 1(0.1) = 0.1$$

$$x_2 = x_1 + \Delta x = x_0 + 1\Delta x + \Delta x = x_0 + 2\Delta x = 0.2$$

\vdots

$$x_9 = x_0 + 9\Delta x = 0.9$$

$$f(x) = \sqrt{1-x^2}$$

Now,

$$\int_0^1 \sqrt{1-x^2} dx = \Delta x \{f(x_0) + f(x_1) + \dots + f(x_9)\}$$

$$= (0.1) \{f(0) + f(0.1) + f(0.2) + f(0.3) + f(0.4) + f(0.5) + f(0.6) + f(0.7) + f(0.8) + f(0.9)\}$$

$$= (0.1) \{1 + 0.99499 + 0.97980 + 0.95394 + 0.91652 + 0.86603 + 0.8 + 0.71414 + 0.6 + 0.43589\}$$

$$= \{0.82613\}$$